WE CLAIM:

1. An imager based optical code reading and weighing system comprising:

an image sensor having a field of view;

a weighing platform in the field of view of the image sensor which platform moves in response to the weight of an object placed on the platform; and

an electronic processor receiving image information from the image sensor

for detecting and decoding optical code in the field of view of the image sensor;

for measuring the amount of movement of the platform in response to the weight of the object placed on the platform from image data from the image sensor; and

for producing a signal related in value to the weight of the object.

2. The apparatus of claim 1, further comprising a laser light projector for projecting a pattern of light in the field of view of the image sensor along an optical path which is not colinear with at least one of an optical axis of the image sensor and an axis of movement of the weighing platform in response to the weight of the object,

and wherein the image sensor detects a reflection of the pattern and produces therefrom the signal related in value to the weight of the object.

3. The apparatus of claim 2 wherein the pattern includes a line and wherein movement of the platform is detected by measuring a dimension of a discontinuity in the line at an edge of the platform.

4. the apparatus of claim 3, wherein the pattern includes a line and wherein a vertical height of the object on the platform is detected by measuring a dimension of a discontinuity in the line at an upper edge of the object.

5. The apparatus of claim 2, wherein the pattern includes two non-parallel lines and wherein dimensions of the object on the platform are detected by measuring the length of a segment of one line lying between edge discontinuities in the direction of the length of the object, and by measuring the length of a segment of the other line lying between edge discontinuities in the direction of the width of the object.

6. An apparatus for obtaining and displaying video image signals comprising:

a handheld optical code reader including a two dimensional image sensor and means for compressing video data obtained from the sensor;

a host terminal with a communication port and display; and

a narrow band width data link over which compressed video data from the handheld optical code reader is communicated to a communication port of the host terminal.

7. The apparatus of claim 6, further comprising means for detecting a command bar code for switching the handheld optical code reader between a code reading mode and a video data communication mode.

8. The apparatus of claim 6, wherein the handheld optical code reader includes a microprocessor and output driver for communication with the host terminal, and wherein the host terminal is a computer with a serial communication port for receiving the compressed video data and for receiving decoded information from optical codes read by the handheld code reader.

9. The apparatus of claim 6, wherein the narrow band width data link is a cable connected between the handheld optical code reader and a serial communication port of the host terminal.

10. The apparatus of claim 6, wherein the narrow band width data link is a radio frequency transmitter and receiver.

11. The apparatus of claim 6, wherein the narrow band width data link is an infrared transmitter and receiver.

12. The apparatus of claim 6, further comprising means for detecting motion in a field of view of the handheld optical code reader.

13. The apparatus of claim 12, wherein motion is detected by monitoring the bandwidth of the compressed video signal.

14. A method for performing motion detection using an optical code reader comprising the steps of:

positioning an image sensor of the optical code reader so that a field of view of the image sensor includes a region to be monitored for motion;

switching the optical code reader from an optical code reading mode to a motion detection mode;

compressing video data in the field of view of the image sensor by identifying changes between frames of video data; and

monitoring the frequency of changes between frames of video data to identify frequency changes indicative of the movement of objects of interest in the field of view.

15. The method of claim 14, further comprising the steps of:

transmitting the compressed video data from the optical code reader to a terminal; and

displaying the image of the field of the image sensor at the terminal, and

observing images at the terminal based on the detection of motion in the field of view.

16. An apparatus for detecting optical code and one or more physical parameters of a target object comprising:

an image sensor for producing electronic signals corresponding to a two dimensional array of pixel information for a field of view containing the target object;

means for projecting a pattern on a target in the field of view of the sensor; and

means for reading an optical code in the field of view of the image sensor and for determining a physical parameter of the target object from the reflection of the pattern from the target object onto the image sensor.

17. The apparatus of claim 16, wherein the physical parameter of the target object is determined by measuring edge discontinuities in the pattern caused by that target object.

18. The apparatus of claim 17, further comprising a weighing platform for supporting the target object in the field of view of the image sensor; and

means for supporting the platform which permits the platform to move in a vertical direction for a distance approximately proportional to the weight of the target object.

19. The apparatus of claim 18, further comprising a counter surface adjacent to the platform, wherein the edge discontinuity measured is between an edge of the platform and an edge of the counter surface.

20. The apparatus of claim 19, wherein the projected pattern is one or more lines and wherein the measured edge discontinuity is a separation between reflected segments of the line.

21. The apparatus of claim 19, wherein the projected pattern includes two approximately perpendicular lines which cross near the center of the weighing platform.

22. An optical system for a handheld optical code reader including an image sensor, comprising:

an objective lens located in an optical path of the code reader for focusing an image of an optical code onto the image sensor;

a carrier rotatable about an axis and having a sector radially outwardly located from the rotation axis through which optical code are read, the carrier having a second sector located radially outwardly of the axis, said second sector containing an optical element, which when placed in the optical path changes the focal distance of the optical system to a focal distance more

appropriate for producing video images with the handheld optical code reader; and

means for rotating the carrier for selectively positioning a selected one of first and said second sectors in the optical path.

23. The optical system of claim 22, wherein the first sector is open and the second sector contains a plano glass optical element which increases the focal distance of the optical system.

24. The optical system of claim 22, further comprising:

a third sector located radially outwardly of said axis and selectively positionable in the optical path of the system and containing a first monochrome filter; and

a fourth sector located radially outwardly of said axis and selectively positionable in the optical path of the system, containing a second, different monochrome filter, wherein the monochrome filter are employed to obtain image data to produce color video display.

25. The optical system of claim 24, further comprising:

a laser pattern projector for projecting pattern from the handheld optical code reader, and

a fifth sector located radially outwardly of said axis and selectively positionable in the optical path of the system, containing an optical band pass filter approximately centered on a wavelength of the projected pattern.

26. The optical system of claim 25, further comprising means for monitoring the rotation of the carrier in response to the detection of the fifth sector being rotated into the optical path.

27. The optical system of claim 22, wherein the carrier is a wheel rotatable about a central axis thereof and divided into plural angular sectors, at least one of which sector being adapted for positioning in the optical path for imaging an optical code in a working depth of field of the optical code reader and at least two other sectors being adapted for focusing images on the image sensor from which a color video signal is derived.

28. An optical system for an optical code reader comprising:

an area image sensor;

an objective lens assembly adapted and positioned for focusing an image onto the area image sensor; and

a transparent optical element with substantially parallel, planar surfaces, selectively movable into the optical path of the image sensor;

wherein the system has a focal distance adapted for reading code symbols relatively near to the objective lens assembly and another focal distance for imaging scenes relatively far from the objective lens assembly; and

wherein the thickness of the plate is selected to change the focal distance of the system between the one focal distance and the other.

29. The optical system of claim 28, wherein the system operates in a hyper-focal mode when the optical element is moved into the optical path of the image sensor.

30. The optical system of claim 28, wherein the optical element is a glass plate located in a sector of a rotatable wheel located between the objective lens assembly and the image sensor.

31. A method for measuring orthogonal dimensions of a rectangular solid object in a field of view of a handheld imager, comprising the steps of:

obtaining pixel information for the field of view of the imager;

determining a distance between the object and the imager;

determining the angles between edges of the rectangular solid meeting at a nearest corner of the object and determining an imaged length of edges of the rectangular solid to be measured from the pixel information; and

scaling the determined image length of the edges responsive to the determined angles and determined distance between the rectangular solid and the imager to obtain an approximation of the actual length of said edges.

32. The method of claim 31, wherein the distance between the object and the imager is determined from a detected image of an aiming pattern projected by the imager onto the object.

33. The method of claim 31, wherein the distance between the object and the imager is determined from at least one image dimension of an optical code symbol of known size on the object.

34. The method of claim 31, wherein the handheld imager is an imaging optical code reader.

35. A handheld imaging device for reading optical code and providing video image signals to a remote terminal, comprising:

an image sensor having a field of view;

an aiming pattern projector for aiming the image sensor at an optical code;

a manually actuated trigger switch for initiation of reading an optical code in the field of view of the image sensor;

output circuitry for selectively outputting signals from the image sensor corresponding to at least three image frames per second of a changing two dimensional image in the field of view of the image sensor; and

output circuitry for selectively outputting data decoded from an optical code in the field of view of the image sensor.